# THE UNITED SALVERS OF MAISTURE

# TO ALL TO WHOM THESE PRESENTS SHALL COME:

# Oklahoma Agricultural Experiment Station

Militereas, There has been presented to the

# Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, therefore, this certificate of plant variety protection is to grant unto the said applicant(s) and the successors, heirs or assigns of the said applicant(s) for the term of severteen—years from the date of this grant, subject to the payment of the required fees and periodic replenishment of viable basic seed of the variety in a public repository as provided by LAW, the right to exclude others from selling the variety, or offering it for sale, or reproducing it, or importing it, or exporting it, or using it in producing a hybrid or different variety therefrom, to the extent provided by the Plant Variety Protection Act. In the United States seed of this variety (1) shall be sold by variety name only as class of certified seed and (2) shall conform to the number of generations ified by the owner of the rights. (84 Stat. 1542, As amended, 7 U.S.C. 2321 ET SEQ.)

WHEAT

Nicoma

In Testimony Edithereot. Thave hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington this 19th day of November in the year of our Lord one thousand nine hundred and seventy times.

Earl & But

Lecastary of Anniewiture

Susi Livoller

Commissioner Plant Variety Pretiction Office Grain Division

Agricultural Marketing Service

# AME ANAMED SANIBS OBWINESTOR

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NOW, therefore, this certificate of plant variety protection is to grant unto the said applicant(s) and the successors, heirs or assigns of the said applicant(s) for the term of Seventeen—Years from the date of this grant, subject to the payment of the required fees and periodic replenishment of viable basic seed of the variety in a public repository as provided by LAW, the right to exclude others from selling the variety, or offering it for sale, or reproducing it. Or importing it, or exporting it, or using it in producing a hybrid or different variety therefrom, to the extent provided by the Plant Variety Protection Act. In the United States seed of this variety (1) shall be sold by variety name only as class of certified seed and (2) shall conform to the number of generations upied by the owner of the rights. (84 Stat. 1542, as amended, 7 U.S.C. 2321 et seq.)

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Earl & But

- Secretary of Argriculture

Commissioner Commissioner

Plant Variety Protection Office Genin Division

Agricultural Abarketing Service

#### WHEAT

#### 'Nicoma'

#### 13A. Exhibit A:

Pedigree: Triumph/3/(C.I.12406) Marquillo/Oro//Oro/Tenmarq

'Nicoma' was selected for early maturity and strong gluten properties. Grown in Oklahoma yield tests and in Southern Regional performance nursery.

'Nicoma' is stable (it does not exceed normal range of variability) for important identifying characteristics.

Variability has been observed for:

- Chaff color (certain environments produce black streaks in chaff).
- Spiklet alignment (occassionally exhibits a slight rotation in arrangement of spiklets along rachis)
  - 3. Plant height (small percentage of taller plants).

### 13B. Exhibit B:

'Nicoma' is early, midtall, with midstrong white stem. are glabrous; shoulders are narrow; beaks midwide, length 1 to 3 mm.; awns white, length 3 to 7 cm.; kernels midlong, brush midsized.

#### 13C. Exhibit C:

Common Kind

Hard red winter Type

173 days to 1st flower, 190 Season days to last flowering

4 days earlier than 'Scout'

Maturity 84 cm., 5 cm. shorter than 'Scout' Plant height

Green Plant color booting Yellow Anther color

Waxy, anthocyanin absent Stem

Last internode of rachis Hairy Hollow Internodes

No. of nodes

20 cm. length Internode below flag leaf:

# 13C. Exhibit C (continued):

Auricles Flag leaf

First leaf sheath

Head

Glumes

Shoulder Beak

Coleoptile

Seedling anthocyanin Juvenile growth habit

Seed Brush. Seed size

Seed crease

Disease

: Hairy, anthocyanin absent: Recurved, not twisted

: Glabrous

: Dense, tapering awned, 7 cm. long,

8 mm. wide

White, midlong, midwide

: Square Acuminate White Absent

Semi-erect

Red, ovate, with rounded cheeks Short, not collared 7 mm. length, 3 mm. width, 37 gm.

per 1,000 seed

Narrow, shallowSusceptible to stem rust, leaf

rust, and powdery mildew; Resistant to loose smut

: Susceptible

Green bug

Similar to 'Triumph 64'.

# 13D. Exhibit D:

'Nicoma' is most similar to 'Triumph 64'. It is also similar to 'Triumph' in maturity, plant height, test weight, winter hardiness and resistance to loose smut.

'Nicoma' has significantly stronger gluten properties as evidenced by a longer mixing time and higher mixing tolerance than 'Triumph' and 'Triumph 64'. It is superior to 'Triumph' in grain yield potential and milling and baking quality. 'Nicoma' has consistently averaged 15% less rust than 'Triumph' in field tests.

## Exhibit E:

Oklahoma Agricultural Experiment Station is sole owner of 'Nicoma' wheat. It was developed at Oklahoma Agricultural Experiment Station by its employers.

# Origin and Breeding History

Nicoma is a "pure-line" variety developed by the  $F_2$  Progeny Method of breeding, from a cross of Triumph by C.I.12406. The final individual head selection was made in the  $F_5$  generation of an  $F_2$  sub population. The cross was made at the Oklahoma Agricultural Experiment Station in 1954 for the purpose of combining the early maturity and yield stability of Triumph with the strong gluten properties of C.I.12406.

Triumph is a widely-grown, early maturing variety with "mellow" gluten properties. A detailed description of this variety has been published (Briggle and Reitz. 1963. USDA Tech. Bul. 1278).

C.I.12406 is an unreleased Kansas experimental strain of the pedigree: Marquillo/Oro//Oro/Tenmarq. It is 7 to 10 days later than Triumph in maturity and is characterized by strong gluten properties resulting in a long mixing time and high mixing tolerance of the dough (Schlehuber, et al. 1967. Crop Sci. 7:13-16).

# Steps in Breeding and Testing

- 1954 ---- Cross was made at the Oklahoma Agricultural Exp. Sta. Assigned cross number 54X9b.
- 1955 ---- Five  $F_1$  plants grown in greenhouse.
- 1956 ---- Not grown.\*
- 1957 ---- Not grown.\*
- 1958 ----  $F_2$  population grown as spaced-plants in the field and individual plants selected.
- 1959 --- Grown as F<sub>3</sub> plant rows. Selection made among rows, but not within.
- 1960 ---  $F_4$  grown as  $F_2$  subpopulations in special genetic study (see article by Schlehuber et al. 1967. Crop Sci. 7:13-16).

- 1961 ----  $F_5$  same as above. A total of 111 head selections were made.
- 1962 --- F<sub>6</sub> grown as head rows. Along with others, row number 7514 was selected. Experimental number OK627514 assigned.
- 1963 ---- OK627514 grown in observation nursery.
- 1964 ---- Grown in Preliminary Yield Nursery (PYN) at Stillwater.
- 1965 ---- Entered in Intermediate Wheat Performance Nursery (IWPN).
- 1966 ---- Grown in IWPN for second year. Entered in Southern Regional Performance Nursery (SRPN). Assigned Cereal Investigation number C.I.13874.
- 1967 --- Tested in SRPN for second year. Entered in the Oklahoma Advanced Wheat Performance Nursery (AWPN). 300 head rows grown for initial Breeder Seed Increase (BSI).
- 1968 --- Tested for third year in SRPN and for second year in AWPN.
  Entered in collaborative Large Scale Milling and Baking
  tests (LSMB). 300 progeny head rows grown for BSI.
- 1969 --- Tested for third year in AWPN and for second year in LSMB. 270 progeny blocks grown for BSI but abandoned because of storm damage.
- 1970 --- Tested for fourth year in AWPN. One acre BSI block grown at Perkins from bulked remnant seed of 1968 BSI progeny head rows.
- 1971 ---- Tested for fifth year in AWPN. Ten acre BSI grown at Tipton for the production of Foundation Seed. A total of 400 bushels of Foundation seed distributed to growers in the fall of 1971.

<sup>\*</sup>C.I.12406 X Triumph and the reciprocal cross of Triumph X C.I.12406 were made in 1954 and assigned cross numbers 54X9a and 54X9b, respectively. Both  $F_1$  populations were grown in 1955. In 1956 and 1957 the 54X9a population (C.I.12406 X Triumph) was grown, but since no lines were recovered with Triumph maturity, this population was abandoned and the  $F_2$  population of 54X9b (Triumph X C.I.12406 was picked up in 1958.

PVPA Application No. 72118 Nicoma Wheat

Revised Exhibit A.

Please include a statement or evidence of varietal stability or frequency of variants.

Observations indicate that Nicoma is stable (i.e. does not exceed normal range of variability) for important identifying characteristics. Variability has been observed in the following 3 characteristics. 1) Chaff color. Nicoma is normally white chaffed but in certain environments exhibits black streaks in the chaff as does its parent, Triumph. 2) Spikelet alignment. Nicoma occassionally exhibits a slight rotation in the arrangement of spikelets along the rachis. 3) Plant height. Nicoma occassionally exhibits a small percentage of slightly taller-thannormal plants. However, the degree of variability is considered to be within the range of acceptance for most wheat varieties.

# Botanical Description

Nicoma is a hard red winter wheat. It is early in maturity, and midtall in plant height. The stem is white and midstrong; the spike is awned, fusiform to oblong, middense, and inclined; the glumes are glabrous, white (occassionally with black markings), midlong, and narrow; the shoulders are narrow and oblique to square (mostly square); the beaks are midwide, acuminate, and vary from 1 to 3 mm in length; the awns are white and 3 to 7 cm in length; the kernels are red, midlong, hard, and ovate; the germ is midsized; the crease is midwide and shallow; the cheeks are rounded; the brush is midsized and midlong.

EXHIBIT C
(Wheat)

## **OBJECTIVE DESCRIPTION OF VARIETY**

WHEAT (TRITICUM SPP.)

INSTRUCTIONS: See Reverse. WHEAT (TI	TRITICUM SPP.)				
NAME OF APPLICANT(S) Oklahoma Agricultural Experime	ent Station FURN NUMBER				
ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code)					
Oklahoma State University	72118  VARIETY NAME OR TEMPORARY  DESIGNATION				
Stillwater, Oklahoma 74074	S and the state of				
Simwarer, Oktanoma 74074	Nicoma				
Place the appropriate number that describes the varietal character Place a zero in first box (e.g. 089 or 09) when number	ter of this variety in the boxes below. r is either 99 or less or 9 or less.				
1. KIND:					
1 1 = COMMON 2 = DURUM 3 = EMMER 4 = SPELT	5 = POLISH 6 = POULARD 7 = CLUB				
2. TYPE,	1 = SOFT $3 = OTHER (Specify)$				
2 1 = SPRING 2 = WINTER 3 = OTHER (Specify)	2 1 = SOFT 3 = OTHER (Specify) 2 = HARD				
2 1 = WHITE 2 = RED 3 = OTHER (Specify)					
3. SEASON - NUMBER OF DAYS FROM EMERGENCE TO:	•				
1 7 3 FIRST FLOWERING	1 9 0 LAST FLOWERING				
4. MATURITY (50% Flowering):					
0 4 NO. OF DAYS EARLIER THAN	2 1 = ARTHUR 2 = SCOUT 3 = CHRIS				
NO. OF DAYS LATER THAN	4 = LEMHI 5 = NUGAINES 6 = LEEDS				
5. PLANT HEIGHT (From soil level to top of head):					
0 8 4 cm. High					
CM. TALLER THAN	., l = arthur 2 = scout 3 = chris				
0 5 CM. SHORTER THAN	2 4 = LEMHI 5 = NUGAINES 6 = LEEDS				
6. PLANT COLOR AT BOOTING (See reverse):	7. ANTHER COLOR:				
2 1 = YELLOW GREEN 2 = GREEN 3 = BLUE GREEN	1 1 = YELLOW 2 = PURPLE				
8. STEM:					
1 Anthocyanin: 1 = ABSENT 2 = PRESENT	2 Waxy bloom: 1 = ABSENT 2 = PRESENT				
Hairiness of last internode of rachis: 1 = ABSENT 2 = PRESENT	1 Internodes: 1 = HOLLOW 2 = SOLID				
3 NO. OF NODES (Originating from node above ground)	2 0 CM. INTERNODE LENGTH BETWEEN FLAG LEAF AND LEAF BELOW				
9. AURICLES:					
Anthocyanin: 1 = ABSENT 2 = PRESENT	Hairiness: 1 = ABSENT 2 = PRESENT				
10. LEAF:	· · · · · · · · · · · · · · · · · · ·				
Flag leaf at 1 = ERECT 2 = RECURVED booting stage: 3 = OTHER (Specify):	Flag leaf: 1 = NOT TWISTED 2 = TWISTED				
Hairs of first leaf sheath: 1 = ABSENT 2 = PRESENT	Waxy bloom of flag leaf sheath: 1 = ABSENT 2 = PRESENT				
MM. LEAF WIDTH (First leaf below flat leaf)	CM LEAF LENGTH (First leaf below flee leaf):				

PVPA
Application No. 72118
Nicoma Wheat

Revised Exhibit 1.

Please indicate a statement as to whether the variety Triumph used as a comparison is most similar to Nicoma.

Triumph 64 (C.I.13679) is most similar to Nicoma in most agronomic characteristics. However, it differs from Triumph 64 in bread-making quality. It has stronger gluten properties as evidenced by a longer mixing time and a higher mixing tolerance of the dough.

#### Data Indicative of Novelty

Nicoma is <u>similar to Triumph in maturity</u>, plant height, test weight, and winterhardiness; but has slightly stronger straw than Triumph. It apparently has the 'Triumph' type resistance to loose smut. Although Nicoma is susceptible to leaf rust in the seedling stage, it appears to have some degree of adult plant resistance to this organism. In field tests, Nicoma has consistently averaged 15% less rust than Triumph. Nicoma is superior to Triumph in grain yield potential and is markedly superior to Triumph in milling and baking quality. It has a long mixing requirement and a high mixing tolerance of the dough as contrasted to the short mixing time and low mixing tolerance of Triumph.

## (continued Exhibit D)

Table 1. Average quality data of C.I.13874 and several other wheat varieties in the Oklahoma Advanced Wheat Performance Nursery, 1969 and 1970. (Analyses by O.A.E.S. Quality Laboratory)

Variety	Wheat Protein (%)	Flour Protein (%)	Flour Yield (%)	Water Absorp. (%)	Mixing Time (min)	Corrected Loaf Vol. (cc)
C.I.13874*	14.0	12.3	68.9	62.6	6:15	927
Triumph	14.7	13.1	67.5	62.2	3:20	942
Danne	13.5	12.1	67.7	63.0	5:15	921
Scout 66	13.9	12.6	70.6	63.9	4:00	993

<sup>\*</sup> Nicoma

Table 2. Average quality data of C.I.13874 and several other wheat varieties in the Southern Regional Performance Nursery, 1966-1968. (Analyses by Regional Quality Laboratory)

Variety	Wheat Protein (%)	Flour Protein (%)	Flour Yield (%)	Water Absorp. (%)	Mixing Time (min)	Corrected Loaf Vol. (cc)
C.I.13874*	13.6	12.7	<b>74.</b> 6	62.0	4:40	866
Triumph	14.2	13.3	73.7	59.4	2:15	860
Danne	12.6	11.7	73.7	60.2	3:30	917
Scout 66	13.4	12.2	74.6	60.5	3:20	906

<sup>\*</sup> Nicoma

## Exhibit E

# Statement of the Basis of Applicant's Ownership

Dr. James A. Whatley, Director of the Oklahoma Agricultural Experiment Station is the applicant. Dr. A.M. Schlehuber, now retired, but formerly a plant breeder, E.L. Smith, D.C. Abbott, and H.C. Young of the Oklahoma Agricultural Experiment Station all contributed to the selection, development and evaluation of this variety. The Oklahoma Agricultural Experiment Station is the owner of the Nicoma wheat variety.

FORM GR-470-6 (REVERSE)			·
11. <b>HEAD:</b> 2 Density: 1 = LAX 2 = DENSI	E .	Shape: 1 = TAPE 4 = OTHE	RING 2 = STRAP 3 = CLAVATE R(Specify)
4 Awnedness: 1 = AWNLESS 2	= APICALLY AWNLETED 3 =	AWNLETED 4 = AWN	ED
	2 = YELLOW 3 = PINK 4 = F 6 = BLACK 7 = OTHER		<del></del>
0 7 CM. LENGTH		0 8 MM. WIDTH	
12. GLUMES AT MATURITY: 2 Length: 1 = SHORT (CA. 7 mm.) 3 = LONG (CA. 9 mm.)	2 = MEDIUM (CA. 8 mm.)	2   Width: 1 = NARR	OW (CA. 3 mm.) 2 = MEDIUM (CA. 3.5 mm.) (CA. 4 mm.)
Shoulder 1 = WANTING 2 = C shape: 4 = SQUARE 5 = EL	DBLIQUE 3 = ROUNDED LEVATED 6 = APICULATE	3 Beak: 1 = OBTUS	SE 2 = ACUTE 3 = ACUMINATE
13. COLEOPTILE COLOR:		14. SEEDLING ANTHO	CYANIN:
1 1 = WHITE 2 = RED 3 = F	PURPLE	1 = ABSENT	2 = PRESENT
15. JUVENILE PLANT GROWTH HAB	IT:		
2 l = PROSTRATE 2 = S	EMI-ERECT 3 = ERECT		·
16. SEED:			· · · · · · · · · · · · · · · · · · ·
1 Shape: 1 = OVATE 2 = OVAI	L 3 = ELLIPTICAL	Cheek: 1 = ROUN	IDED 2 = ANGULAR
2 Brush: 1 = SHORT 2 = MEDI	UM 3 = LONG	Brush: I = NOT	COLLARED 2 = COLLARED
Phenol reaction 1 = IVORY (See instructions): 4 = BROW		10 1 1 1 1	= SMALL (Lemhi) 2 = MEDIUM (Scout) = LARGE (Arthur)
3 Color: 1 = WHITE 2 ∓ AMBE	R 3 = RED 4 = PURPLE	5 = OTHER (Specify)	· · · · · · · · · · · · · · · · · · ·
0 7 MM. LENGTH 0	3 мм. wіртн	3 .7 GM. PER 10	O SEEDS
17. SEED CREASE:			
1 Width: 1 = 60% OR LESS OF KE	ERNEL 'WINOKA'	Depth: 1 = 20%	OR LESS OF KERNEL 'SCOUT'
2 = 80% OR LESS OF KE	RNEL 'CHRIS'	2 = 35%	OR LESS OF KERNEL 'CHRIS'
3 = NEARLY AS WIDE AS	KERNEL 'LEMHI'	3 = 50 %	OR LESS OF KERNEL 'LEMHI'
18. DISEASE: (0 = Not Tested, 1 = Su	sceptible, 2 = Resistant)		
T STEM RUST (Races)	LEAF RUST (Races)	0 STRIPE RUST (Races)	2 LOOSE SMUT
1 POWDERY MILDEW	BUNT	OTHER (Specify)	
19. INSECT: (0 = Not Tested, 1 = Sus	sceptible, 2 = Resistant)		
0 SAWFLY	APHID (Bydv.)	] GREEN BUG	O CEREAL LEAF BEETLE
OTHER (Specify)	HESSIAN FLY	0 GP 0	<b>А</b> 0 в 0 с
	RACES:	0 0	E 0 F 0 G
20. INDICATE WHICH VARIETY MOST	CLOSELY RESEMBLES THAT SE	JBMITTED:	* * * * * * * * * * * * * * * * * *
CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant tillering Tr	iumph 64	Seed size	Triumph 64
Leaf size		Seed shape	Triumph 64
Leaf color		Coleoptile elongation	Triumph 64
Leaf carriage		Seedling pigmentation	Triumph 64
	TRICORN TI		

#### INSTRUCTIONS

GENERAL: The following publications may be used as a reference aid for the standardization of terms and procedures for completing this form:

- (a) L.W. Briggle and L. P. Reitz, 1963, Classification of Triticum Species and Wheat Varieties Grown in the United States, Technical Bulletin 1278, United States Department of Agriculture.
- (b) W.E. Walls, 1965, A Standardized Phenol Method for Testing Wheat Seeds for Varietal Purity, contribution No. 28 to the handbook of seed testing prepared by the Association of Official Seed Analysts. (See attachment.)

LEAF COLOR: Nickerson's or any recognized color fan should be used to determine the leaf color of the described variety.

#### FORM APPROVED OMB NO. 40-R3712

# APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

INSTRUCTIONS: See Reverse.			***	AL TICE AND Y		
1. VARIETY NAME OR TEMPORARY DESIGNATION	2. KIND NAME		PVPO NUMBER 72 118			
Nicoma	Wheat		<u> </u>			
3. GENUS AND SPECIES NAME	4. FAMILY NAME (Botanical) Gramineae		3/28/72	3:00 A.M.		
Triticum aestivum L. em.	5. DATE OF DETERMINATION		FEF RECEIVED	CHARGES		
The11	August, 1966		\$250.00			
6. NAME OF APPLICANT(S)	Code	nd No. or R.F.D. No., (	City, State, and ZIP	B. TELEPHONE AREA CODE AND NUMBER		
Oklahoma Agricultural	Oklahoma Sta	te University		405-372-6211,X <del>266</del>		
Experiment Station	Stillwater,	tillwater, Oklahoma 74074 405-372				
	FORM OF	110. STATE OF INCOF	RPORATION	11. DATE OF INCOR-		
9. IF THE NAMED APPLICANT IS NOT A PER ORGANIZATION: (Comporation, partnership, State University	association, etc.)	Oklahoma		PORATION 12-14-1891		
12. Name and mailing address of applic	ant representative(s	), if any, to serve	in this application a	nd receive all papers:		
Dr. R. S. Matlock, Head Department of Agronomy Oklahoma State University Stillwater, Oklahoma 74074		**, **	••			
13. CHECK BOX BELOW FOR EACH ATTACH						
X 12A. Exhibit A, Origin and Bree			on 52, P.L. 91-577)			
x 128. Exhibit B, Botanical Desc	ription of the Varie	ty				
12c. Exhibit C, Objective Desc	ription of the Varie	ty				
x) 120. Exhibit D, Data Indicative	·					
X 12E. Exhibit E, Statement of the				·		
The applicant declares that a viable s ance of a certificate and will be reple	sample of basic see enished periodically	d of this variety wi in accordance with	ll be deposited upon h such regulations a	request before issu- s may be applicable.		
(See Section 52, P.L. 91-577).	<del></del>	<del></del>	1	of postition cond?		
14A. Does the applicant(s) specify that (See Section 83(a), P.L. 91-577) (	t seed of this varied [[[''Yes,'' answer	14B and 14C below.	) XIYES LINO			
148-Does the applicant(s) specify tha	t this variety be	14C. If "Yes," to	o 14B, how many gen	erations of production		
limited as to number of generation			der seed? Foundat: - 3 generations	ion, Registered,		
Applicant is informed that false repre						
			***	· · · · · ·		
The undersigned applicant(s) of this	sexually-reproduced	l novel plant variet	y believes that the r	variety is distinct,		
uniform, and stable as required in Sec		tled to protection w	nder the provisions	of Section 42 of the		
Plant Variety Protection Act (P.L. 9)	I-5/7).	•	1000	* * * * * * * * * * * * * * * * * * * *		
2-15-72		James	awholley			
(DATE)		(	SIGNATURE OF APPLIC	ANT		
(DATE)	<del></del>		SIGNATURE OF APPLIC	EANT)		

#### INSTRUCTIONS

GENERAL: Send an original copy of the application, exhibits and \$50.00 fee to U.S. Dept. of Agriculture, Consumer and Marketing Service, Grain Division, Hyattsville, Maryland 20782. Retain one copy for your files. All items on the face of the form are self-explanatory unles noted below.

#### ITEM

- 5 Insert the date the applicant determined that he had a new variety.
- 12a First, give the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method. Second, give the details of subsequent stages of selection and multiplication. Third, indicate the type and frequency of variants during reproduction and multiplication and state how these variants may be identified. Fourth, provide evidence on stability.
- 12b First, give any special characteristics of the seed and of the plant as it passes through the seedling stage, flowering stage and the fruiting stage. Second, describe the mature plant and compare it with a similar commercial variety grown under the same conditions, and indicate the differences.
- 12c A supplemental form will be furnished by the PVPO to describe in detail a variety for each kind of seed.
- 12d Provide complete data indicative of novelty. Seed and plant specimens may be submitted and seeds submitted may be sterile. Where possible, include photographs of plant comparisons, chemical tests, etc.
- 12e Indicate whether applicant is the actual breeder, the employer of the breeder, the owner through purchase or inheritance, etc.

